

Project Blue Revolution A Journey from Water Scarce to Water Surplus District Kutch

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- ▶ **Participatory Ground Water Management Activities by Industries through CSR**
- ▶ **Way forward**

Present Situation of Water

- ▶ The Narmada Water was brought to Kutch through 200MLD pipeline in year 2002, out of which 145MLD was allocated for the Drinking Purpose and Balance 55MLD was allocated for the Industries.
- ▶ Whereas presently out of total 270 MLD being supplied to Kutch, 86 MLD has been sanctioned to the industries

Project Blue Revolution

- ▶ The project Blue Revolution has been initiated by Federation of Kutch Industries Associations (FOKIA) with a view to make Kutch a water surplus district for all the consumption centers viz.
 - ▶ **Industries,**
 - ▶ **Agriculture,**
 - ▶ **Drinking Water and**
 - ▶ **Animal Husbandries etc.**

Project Blue Revolution Objectives

- ▶ Explore Surface and GW Resource Potential and Sources
- ▶ Assess Water Balance
- ▶ To add external water resources
- ▶ Frame Water Resource Management Strategies
- ▶ Cost Benefit Ratio of Techniques and Technology

Project Blue Revolution

- ▶ Data has been Collected by Mr. Yogesh Jadeja, Managing Director- Arid Communities and Technologies with help of satellite images received from Indian Space Research Organization - ISRO and sending team to various fields to appx. 900 Villages of the District.
- ▶ It has taken approx. 2 to 3 years to collect an authenticate data.
- ▶ Around INR 60-65 lakh had been spent on the research work. The funding was made available by Excel Crop Care Ltd. And Agrocel Ltd.
- ▶ Perhaps, This would be the first minute level project research work done for any District in the Entire Globe.

Project Blue Revolution

Data Searched
& Collected
through various
methods



Consumption centers
across Kutch District

Bridging the Gap

Potential Water
sources across Kutch
District

Watering the Kutch: Elements of a blue revolution

The Challenge:

The Question of Water shortages are
cropping up around the world
Many of the world's mightiest rivers run
dry before reaching the sea

Potential Sources of Water

- ▶ Since the Indus Era, Kutch has been considered as water scarce District
- ▶ However, This project intends to concentrate on the following sources of water;
 1. By Laying Separate dedicated Narmada water pipeline of 300MLD for the industries in Kutch District
 2. By Strengthening the Local Water harvesting Regions

Potential Source of Water

3. By increasing Surface Storage Capacity of Present Water Storage Centers at all Villages and Towns
4. By re-using the sewerage water of towns like Anjar, Gandhidham, Bhuj, Mandavi etc.
5. By putting up sea-water Desalination plants on the coastal area of the Kutch District

▶ Work Done So far

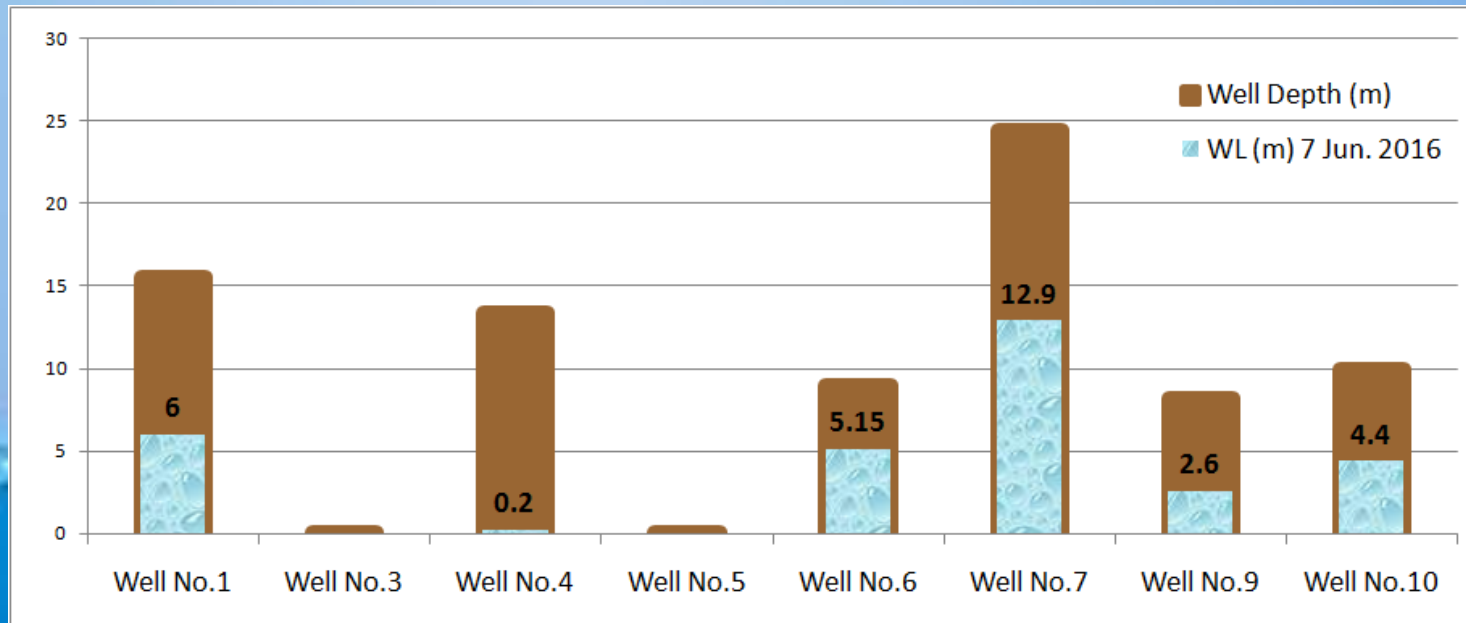
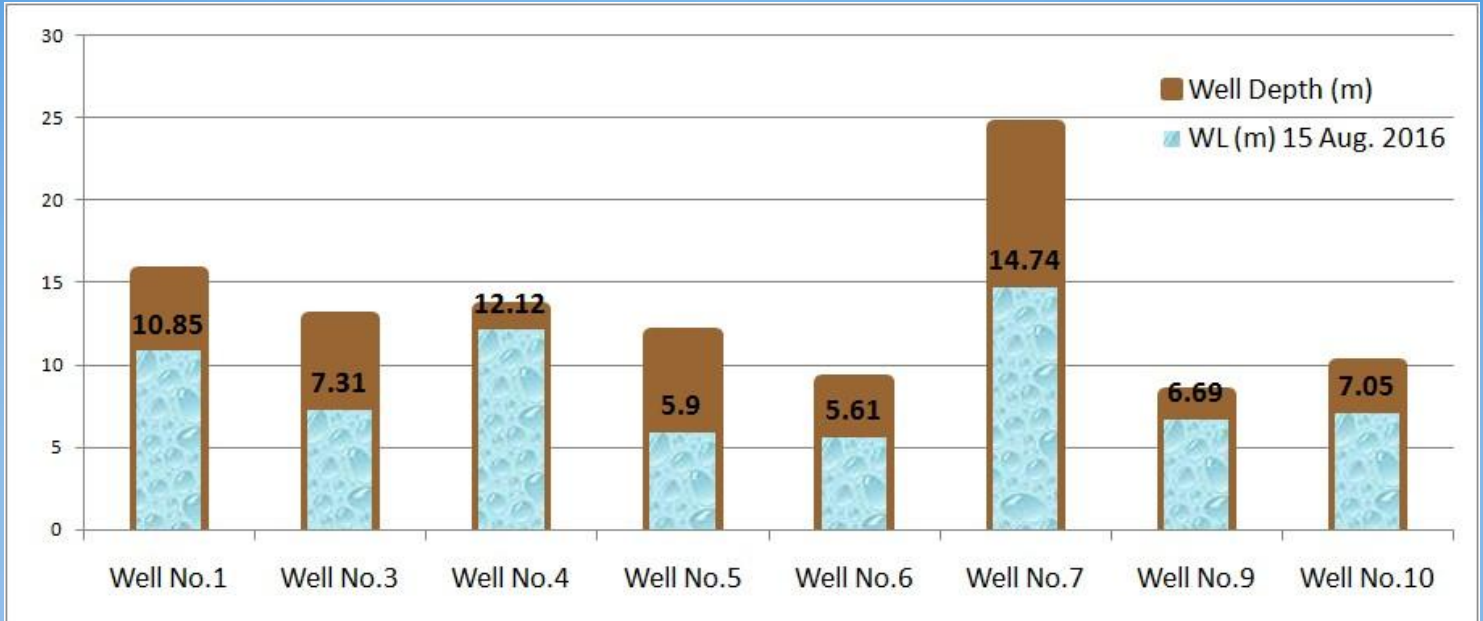
Participatory Ground Water Management Activities by Industries through CSR - progress so far

- ▶ Planning has already been completed for 400 villages in the District
- ▶ Work started for appx. 150 villages in talukas like Rapar, Mundra, Mandavi, Gandhidham
- ▶ The amount spent so far through CSR is appx. INR 10 Cr.

Impact of Groundwater management in CGPL Project areas

Sr. No.	Activity	Product	Quantity	Outcome
1	Geo-hydrology study and planning	Village level PGWM action plan	12	Action plan with village panchayat
2	Drinking water source study	DW source protection guideline	07	Guideline with panchayat
3	Groundwater recharge augmentation			
3.1	Structure up gradation	Repairing, increased storage capacity	13	<ul style="list-style-type: none"> Water Storage increased by 215 ML Recharge benefit to 35 km² area Recharge support to DW source in 04 villages (13,000 population)
3.2	Demonstration	Gabbian, recharge pit	02	
3.2	Artificial groundwater recharge	Recharge borewell	05	
4	Demand site protocol	Farm bund, soil reclaimed, change in seed, promotion of new variety of crop	33	<ul style="list-style-type: none"> Soil moisture conservation Promotion of low water consumption crop
5	Farmers group (FIG)	Farmer group formulized in each village and base line survey conducted for each farmer	123 farmer profile	<ul style="list-style-type: none"> Micro level plan at farm level to set demonstration
6	Capacity building	Bhujal jankar from project villages	06	<ul style="list-style-type: none"> Empowered with technical knowledge Play an important role in data collection
7	Groundwater observation network	Village level and aquifer level groundwater status in term of recharge, discharge and quality	530 wells	<ul style="list-style-type: none"> Groundwater status report that shared with community

Water level Rise in Recharge wells –ILFS



Hindustan Unilever Limited (HUL)

- Hindustan Unilever Limited (HUL) has been working on water conservation and management project – “JalPrabandh” under their Prabhat initiatives in six villages of Gandhidam and Anjar district from Dec 2014.
- This project has created water potential of 0.244 billion liters through water resource development activities and soil moisture conservation activities, treated 94 hectare of area, generating 1319 person days employment and 46.44 tons of additional agriculture production, thus benefitted 463 households till March 2016.
- As this project is locally monitored by Lakme Lever factory team and centrally by HUL Prabhat team, the project is funded by Hindustan Unilever Foundation, Coastal Salinity Prevention Cell, Gram Panchayats and Community contribution.
- The project is being implemented by non-profit organization Sahjeevan across Gandhidam and Anjar district in Bhimasar, Ajapar, Pasuda, Varsana, Padana and Tapar villages.

Adani Foundation

➤ Recently, MOU has been executed between Adani Foundation and Ariad Communities and Technologies (Act) to support Participatory Ground Water Management (PGWM) under their Corporate Social Responsibility (CSR), which will lead to achieve sustainable water resources through agricultural use for balanced water.

Wednesday, November 29, 2017 : Kutchmitra

સરકાર, ઉદ્યોગગૃહો અને સ્વૈ. સંસ્થાઓ નિષ્ઠાથી કામ કરે તો કચ્છમાં પાણીની અછત ટળે

ભુજ, તા. ૨૮ : ભૂકંપ પછી નવા ઉદ્યોગોને નાણાકીય પ્રોત્સાહનની જાહેરાતથી જિલ્લામાં ઔદ્યોગિકીકરણની શરૂઆત થઈ અને જિલ્લામાં ઔદ્યોગિકીકરણથી પણ પાણીની તંગીમાં વધારો થયો. જે અંતર્ગત ફોકિયાએ કચ્છ જિલ્લાને પાણીથી સભર બનાવવા માટેની ઝુંબેશ ચાલુ કરી અને કચ્છના વિવિધ ક્ષેત્રોની પાણીની જરૂરિયાત સંતોષવા માટે એક વ્યાપક સર્વે અને રિસર્ચ આદરાયા છે.

પ્રોજેક્ટ બ્લૂ રેવોલ્યુશન-અ જની કોમ વોટર સેક્સ ટુ વોટર સરપ્લસ ડિસ્ટ્રીક્ટ, હંઠેળ કચ્છ પાણીની અછતવાળા પ્રદેશમાંથી પાણીમાં છતવાળો પ્રદેશ બને તેવું કાર્ય છેલ્લા પાંચ-સાત વર્ષથી શરુ થયું છે. જેમાં કચ્છના ૯૦૦ ગામડાનો સેટેલાઈટ અને સ્થળ પરના ફિલ્ડ વર્ક દ્વારા એમના વપરાશકર્તા કેન્દ્રો અને પાણીના સંભવિત સ્ત્રોતનો વ્યાપક અભ્યાસ કરવામાં આવ્યો છે. ફોકિયાના બે સભ્યો એક્સેલ

કોપ કેર અને એગ્રોસેલ લિ.એ આ પ્રોજેક્ટના રિસર્ચ માટે લગભગ રૂપિયા ૫૫ લાખ ખર્ચ્યા છે અને એરિડ

જિલ્લાના વિવિધ ક્ષેત્રમાં 'ફોકિયા' દ્વારા પાણી અંગે વ્યાપક સર્વે

કોમ્યુનિકેશન ટેકનોલોજીના યોગેશ જાડેજાએ પણ આ કામ કર્યું છે. જે કુલ લગભગ ત્રણ હજાર કરોડનાં પ્રોજેક્ટ છે. જે ઉદ્યોગોના અને સરકારના ફંડના સંયુક્ત પ્રયાસોથી જ સાકાર થઈ શકે છે.

હાલમાં લગભગ ત્રણ તાલુકાઓના ચાલીસ ગામોમાં અત્યાર સુધી ઈ-ડિસ્ટ્રીક્ટ દ્વારા દસ કરોડ ખર્ચાયા છે. પરંતુ આ તો હજી શરૂઆત છે અને હાલમાં જ મુંદરા તાલુકાના દસ ગામો માટે પાર્ટીસિપેટરી ગ્રાઉન્ડ વોટર મેનેજમેન્ટ માટે અદાણી ફાઉન્ડેશન અને એરિડ કમ્યુનિટીસ એન્ડ ટેકનોલોજીસ (એક્ટ) વચ્ચે

પણ, મુંદરા ખાતે કરાર થયા છે. એમઆંબુ ઓક્ટોબર ૨૦૧૭થી માર્ચ ૨૦૨૨ સુધીના પાંચ વર્ષ માટે છે.

અદાણી ફાઉન્ડેશનના સર્પોર્ટથી અને એસીટી પ્રોજેક્ટની જરૂરિયાત મુજબ મહત્તમ ૬૦ મહિના સુધી નક્કી કરાયેલા સ્થળોએ આ પ્રોજેક્ટને અમલમાં લાવશે.

અદાણી ફાઉન્ડેશન સી.એસ.આર. હેડ મુકેશ સક્સેના દ્વારા સંચાલિત છે. અધ્યક્ષ ડો. પ્રીતિ અદાણીના માર્ગદર્શન હેઠળ કાર્યરત શિલ્પા, કોમ્યુનિટી હેલ્થ અને ગ્રામ્ય ઈ-ફાસ્ટ્રક્ટર ડેવલપમેન્ટની પ્રવૃત્તિઓને મજબૂત કરવા કાર્યરત છે.

આવાનારા ૧૫ વરસોમાં સરકાર ઉદ્યોગગૃહો અને સ્વૈચ્છિક સંસ્થાઓ જો પૂરી નિષ્ઠાથી આ જ રીતે કામ કરે તો સમગ્ર જિલ્લો પાણીની અછતવાળા પ્રદેશમાંથી પાણીની છતવાળો પ્રદેશ બની શકે છે.

Agreement of Intentions executed on PGWM work during Kutch CSR Conclave held on 02/03/2017

Participatory Ground Water Management	Collectorate – District Kutch GOVERNMENT OF GUJARAT	Federation of Kutch industries Associations, (FOKIA)	Agrocel industries pvt. ltd
			Aarti Industries Ltd.
			Coastal Gujarat Power Limited (CGPL)
			Adani Foundation

Sea Water Desalination Plants established by various industrial houses

Sr. No.	Name of Industries	Location	Capacity in MLD	Appx. Investment in INR in crores	Surplus Capacity (MLD)	Remarks
1	Adani Group of Companies	Navinal, Mundra	47.00	500.00	15.00	
2	Coastal Gujarat Power Ltd., A TATA Power company	Tunda, Mundra	25.00	130.00	Not known	
3	Sanghi Industries Ltd.	Motiver, Abdasa	5.50	50.00	2.50	
4	GMDC Power Plant, A GOG Enterprise	Akrimota, Lakhpat	0.24	10.00	NIL	As per the requirement, they are supplying water to nearby villages for drinking purpose
5	IFGL Refractories Limited	KSEZ, Gandhidham	0.072			
			77.81	690		

Sewerage treatment plant (STP)

established by various industrial houses for re-usage of water

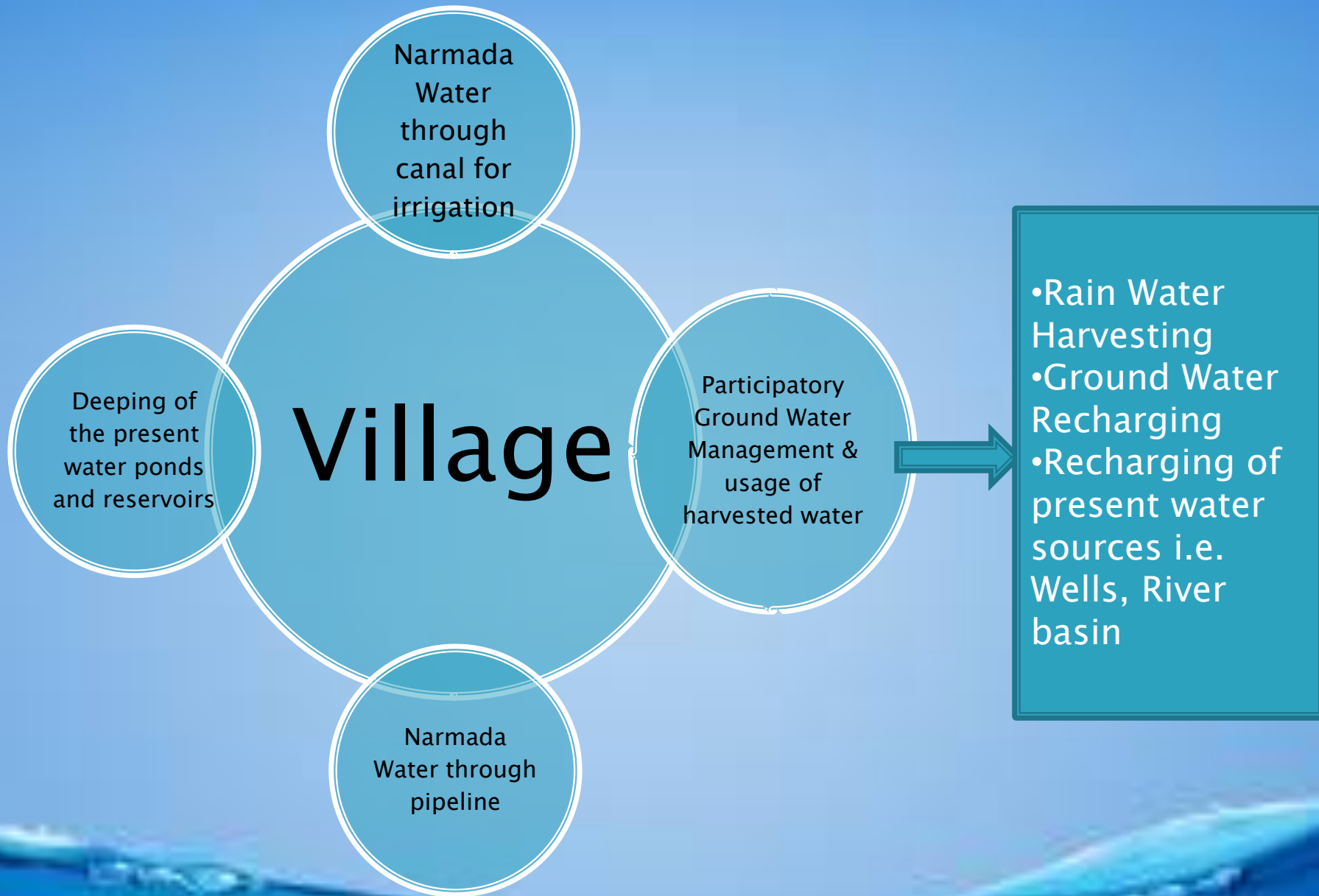
Sr. No.	Name of Industries	Location	Capacity in MLD	Appx. Investment in INR in crores	Surplus Capacity (MLD)	Remarks
1	Welspun Group of companies	Varsamedi, Anjar	30.00	150.00	NIL	The inlet to the plant is only 15MLD
2	Electrotherm (India) Ltd	Samakhiyali	0.05	0.25		
3	Excel Crop Care Limited	Gajod	0.07	0.31		Kera Gram Panchayat
4	Gallant Metal Ltd	Samakhiyali	0.15	0.75	0.35	
5	Indian Steel Corporation Ltd.	Bhimasar	0.44	2.20		
6	Jindal Saw Ltd.	Nana Kapaya & Samagogha	2.00	4.00		
7	Kutch Chemical Ind. Ltd	Padana	0.05	0.25		
8	Lakme Lever Private Limited	Padana	0.15	0.75		
9	Man Industries (India) Limited	Khedoi	0.05	0.25		
10	Saurathra Enviro Project Pvt. Ltd.	Lakdiya	0.015	0.075		
			33	158.83		

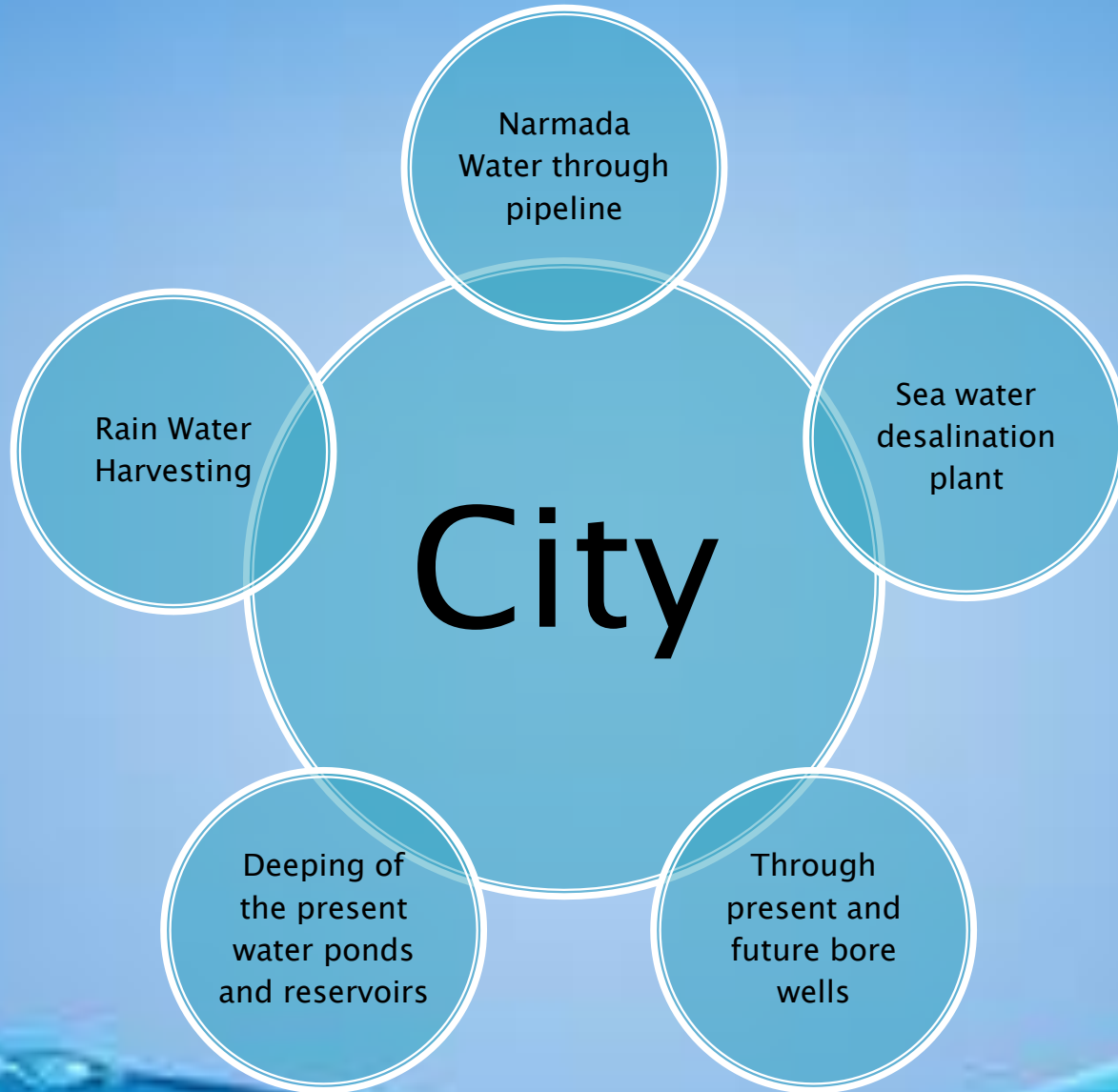
Rain water harvesting done for the storage of surface water by various industrial houses

Sr. No.	Name of Industries	Location	Capacity in MLD	Remarks
1	Welspun Group	Varsameli –Anjar	20	
2	20 Microns Ltd.	Mamuara– Bhuj	0.4	
3	Bharat Food co–operative Ltd.	Mithirohar	0.4	
4	Electrotherm (India) Ltd	Samakhiyali	50	
5	Euro Multivision	Bhachau	0.7	
6	Excel Crop Care Limited,	Gajod – Kutch	0.16	
7	Gallant Metal Ltd	Samakhiyali	27.89	
8	Gelkaps Sports Pvt.Ltd	KSEZ	0.125	
9	IFGL Refractories Limited	KSEZ	0.04	
10	Kutch Chemical Ind. Ltd	Padana	4.5	
11	Saurathra Enviro Project Pvt. Ltd.	Lakadiya	0.3	
12	Shree Renuka Sugars Limited	Bharapar	20	
13	Sumilon Group	Padana	0.75	
			125.265	

Way forward for Kachchh

- ▶ Look beyond industry requirements - Drinking water for community & irrigation water for agriculture need to be included
- ▶ Local management of water resources (PGWM)
- ▶ Invest in evidence/data-based monitoring & management
- ▶ Invest in supply augmentation and demand management
- ▶ Invest in building local capacities and appropriate institutions
- ▶ Invest in appropriate technologies







- Rain Water Harvesting
- Ground Water Recharging
- Recharging of present water sources i.e. Wells, River basin

Participatory Ground Water Management programme projected expenditure

- Rain Water Harvesting
- Ground Water Recharging
- Recharging of present water sources i.e. Wells, River basin

Total Funding requirement	INR 3200 Cr.
Mandatory CSR Contribution From Kutch Industries	40% of project cost spread in the 7 –10 years
Various State and central Government grants	60% of project cost spread in the 7 –10 years
Present Status	As shown in earlier slides
Project completion time	Appx. 10 years from the date
Policy Intervention	To implement the water security plans, prepared by knowledge partner, religiously with the help of various NGOs, Industries etc.

150 MLD sea water desalination plant at Kutch by the Government

Total approx cost of the project	INR 1300 crore
Funding	100% funding would be by Developers
Present status	DPR is under preparation
Project completion time	4 years after commencement
Policy Intervention	A Gujarat government initiative on DBOOT (design, build, own, operate and transfer) basis

sea water desalination plant by Industries

Present status	Already around 70 MLD of captive Sea water desalination plants are operational at various industries across the district
Funding	100% funding would be by Industries
Policy Intervention	Policy should be framed by the State and Central Government to encourage the enterpuners to set up more such type of plants

Supply of Narmada Water for Irrigation through Sardar Sarovar Narmada Nigam Limited

Present Status	The Kutch Branch Canal has reached up to Rapar in Kutch having capacity of 220 cubic water.
Future planning	The canal will reach up to Mandvi in the next 3 years and this will help to irrigate appx. 3lac acres of land
Planning for additional 1.0 MF Narmada water	The work of using additional 1.0 MF Narmada water is likely to be completed in next 5–7 years. This will help to irrigate 10 lac acres more land
Funding	By Government of Gujarat
Policy Intervention	This needs to be expedited by the State Government

Dedicated pipe line to be laid down by GOG for industries for Narmada water from Kutch branch Narmada canal at Chobari or from Maliya to Bhachau .

Total approx cost of the project	INR 50 crore to 100 crore
Funding	By Government of Gujarat
Project completion time	Six Months
Policy Intervention	A Gujarat government should take up the project on urgent basis

* The feeder canal work from KBC to tapar dam has been completed on 31/05/2017 and has been dedicated to the Nation by Hon. Prime Minister, Shree Narendrabhi Modi on 22/06/2017

Usage of urban sewerage water by industries after treatment

Present Status	Various Industrial houses has put up a sewerage treatment plant to treat sewerage water and reuse the water for industries process
Funding	100% funding would be by Industries
Policy Intervention	To encourage the activity , Government should frame a policy

The Role of Govt. & Private Sector

Institution Structure



The Role of Govt. & Private Sector

- ▶ In order to promote such a development there is a need for more interactions between Society, the Government and Industry Fraternity to design the perfect framework to strengthen the water sources listed above.
- ▶ The approx cost of “ Project Blue Revolution” is INR. 3000 Cr.

Thank You....

Federation Of Kutch Industries Associations [FOKIA]

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